**ADHD Historical Timeline**

- **1902**: George Still
- **1917**: Dr. Gonzalo Rodriguez-Lafora
- **1930**: Minimal Brain Damage
- **1937**: Charles Bradley
- **1960**: Minimal Brain Dysfunction
- **1968**: Hyperkinetic Reaction of Childhood (DSM-II)
- **1980**: Attention Deficit Disorder + or – Hyperactivity (DSM-III)
- **1987**: Attention Deficit Hyperactivity Disorder (DSM-III-R)
- **2013**: DSM-5 Adult ADHD validated

**Key Events**:
- **1980**: Attention Deficit Hyperactivity Disorder (DSM-III)
- **1994**: Adult ADHD validated
- **2013**: DSM-5 Adult ADHD validated

**ADHD Definition**

- **1902**: George Still first described hyperkinetic children.
- **1917**: Dr. Gonzalo Rodriguez-Lafora identified hyperkinetic children in his work.
- **1930**: Minimal Brain Damage was recognized.
- **1937**: Charles Bradley’s work on minimal brain dysfunction.
- **1960**: Minimal Brain Dysfunction was identified.
- **1968**: Hyperkinetic Reaction of Childhood (DSM-II).
- **1980**: Attention Deficit Disorder + or – Hyperactivity (DSM-III).
- **1987**: Attention Deficit Hyperactivity Disorder (DSM-III-R).
- **2013**: DSM-5 validated ADHD in adults.

** DSM-5 Validated ADHD**:
- **2013**: DSM-5 Adult ADHD validated.
Dr. Gonzalo Rodriguez-Lafora, an influential physician in Spanish neuropsychiatry and psychology in his 1917 book _Los Ninos Mentalmente Anormales_ reported on: “Children that cannot sustain their attention even to hear or to understand or to respond. Their spirit consistently jumps from one thing to another. They cannot control their reactions. These are the children named as nervous by their parents and undisciplined by their teachers. They spontaneously get up from their desk, play with everything, get distracted even by a moving fly, pinch their classmates, make fun of everything and are in constant activity.”

National Library Madrid, Spain
“To see a single daily dose of benzedrine produce a greater improvement in school performance than the combined efforts of a capable staff working in a most favorable setting, would have been all but demoralizing to the teachers, had not the improvement been so gratifying from a practical viewpoint.”

I in 25 adults worldwide have ADHD

Surman and Bilkey, 2013
EPIDEMIOLOGY
ADHD Longitudinal Course

- 6–9% lifetime rate of ADHD in children
- 70% persistence of ADHD into adolescence
- 10-60% persistence of ADHD into adulthood
- Current population estimates of 4.4% rate of ADHD in adults\(^1\)
- Childhood ratio ADHD males to females - 2:1\(^2\)
- Adult ratio ADHD, males to females – 1:1\(^2\)

(Wender et.al. 2001)

\(^1\)Kessler RC., Adler L, Barkley R, et al., The prevalence and correlates of adult ADHD in the United States: Results from the National Comorbidity Survey Replication, American Journal of Psychiatry, April 2006
\(^2\) DSM-5, APA, 2013
Delayed Brain Growth In ADHD (3 Yrs.)

NS: ADHD=223; Controls = 223

Greater than 2 years’ delay
0 to 2 years delay

“The Prefrontal Cortex is the Goldilocks of the brain.”

Dopamine and norepinephrine levels have to be optimal.

Executive Functioning:
- Planning
- Prioritizing
- Decision making
- Memory
- Organization

Prefrontal Cortex

Cognitive loading in adults
Heritability Co-efficient of ADHD

Average genetic contribution based on twin studies

0 0.2 0.4 0.6 0.76

Breast cancer  Asthma  Schizophrenia  Height

Hudziak, 2000
Nadder, 1998
Levy, 1997
Sherman, 1997
Silberg, 1996
Gjone, 1996
Thapar, 1995
Schmitz, 1995
Edelbrock, 1992
Gillis, 1992
Goodman, 1989
Willerman, 1973

Tobacco and ADHD

- Maternal smoking contributes to premature birth, low birth weight and ADHD
- Smoking is considered a pediatric disease
- High rates of nicotine use in ADHD (40-75% vs 20% in general population)
- Cigarette smoking is a gateway to drug and alcohol abuse
- Tobacco use is leading preventable cause of death worldwide
- Chronic disease management model is effective for treating tobacco dependence and deserves priority like diabetes and hypertension

Hammerness et al., The Journal of Pediatrics, 2012
Rigottia, N.A., JAMA, October 2012
ADHD Clinical Presentation

School Age (ages 6-12)

- Easily distracted
- Homework poorly organized, contains careless errors, often not completed
- Blurts out answers before question completed (often disruptive in class)
- Often interrupts others and displays aggression (difficulties in peer relationships)
- Perception of “immaturity” (unwilling or unable to complete chores at home)

Conners & Jett. 1999 in press
Impairments of ADHD: Cognitive

- Learning disabilities: reading (8-39%), spelling (12-26%), math (12-33%) and handwriting (common 60%+)
- Poor use of time in daily time management; inaccurate time reproduction
- Decreased verbal working memory
- Impaired planning ability

Co-occurring Disorders in Children

MTA Cooperative Group. Arch Gen Psych 1999; 56:1088–96
Impairments of ADHD: Emotion

- Poor self-regulation of emotion; greater emotional expression, especially anger and aggression
- Greater problems coping with frustration

* Skin and sound sensitivity

ADHD
Impact on Family

- Divorce
- Marital discord
- Marital dissatisfaction
- Parenting difficulties

ADHD Clinical Presentation

Adolescent (ages 13-18)

- Sense of inner restlessness
- School work disorganized and shows poor follow-through; fails to work independently
- Engaging in “risky” behaviours (speeding and driving mishaps)
- Poor self-esteem
- Poor peer relationships
- Difficulty with authority figures

Conners & Jett. 1999 in press
Educational Difficulties for Adolescents with ADHD

- Failure to complete and turn in homework (sustained attention)
- Superficial quality of homework (careless errors)
- Poor test performance (rushes through work)
- Inadequate study habits (sustained attention)
- Disorganization, forgetfulness and memory problems (inattention)
- Inconsistent listening and poor note-taking during classes (inattention)
- Difficulty writing essays and papers (written language)

Pink = DSM-5 criteria

Arthur L. Robin, “Training Families with Adolescents with ADHD” from the book Attention-Deficit Hyperactivity Disorder: A Handbook for Diagnosis and Treatment, by Russell A. Barkley
National Factors Contributing to Youth Drug Use and Abuse

• Academic failure beginning in late elementary school, lack of commitment to school, low bonding with other students and teachers

Canadian Centre on Substance Abuse. (2007). Substance Abuse in Canada: Youth in Focus. Ottawa, ON.
Adolescent Driving and ADHD

Teenage drivers with ADHD are:

• 8 times more likely to lose their license
• 4 times more likely to be involved in a collision
• 3 times more likely to sustain a serious injury
• 2 to 4 times more likely to receive a moving violation
ADHD and Sexual Impulsivity

Females:
- 7 times more likely to become pregnant\(^1\)
- 4 times more likely to have Sexually Transmitted Disease\(^1\)

Males:
- 3 times more likely to have casual sex with infrequent condom use\(^2\)
- 5 times more likely to have caused pregnancy\(^2\)

\(^1\) Barkley et al., 2008
\(^2\) Flory et al., 2006
# Comorbidity of ADHD and Other Psychiatric Disorders in Adolescents

<table>
<thead>
<tr>
<th>Psychiatric disorder</th>
<th>% ADHD with comorbidity</th>
<th>% other disorder having ADHD</th>
</tr>
</thead>
<tbody>
<tr>
<td>CD/ODD</td>
<td>35-50%(^{(a)})</td>
<td>30%(^{(b)})</td>
</tr>
<tr>
<td>Anxiety disorders</td>
<td>20-30%(^{(c)})</td>
<td>6-24%(^{(d)})</td>
</tr>
<tr>
<td>Mood disorders</td>
<td>20-30%(^{(d)})</td>
<td>39%(^{(e)})</td>
</tr>
<tr>
<td>SUD</td>
<td>5-50%(^{(f)})</td>
<td>23-31%(^{(g)})</td>
</tr>
<tr>
<td>Learning disorders</td>
<td>20-25%(^{(h)})</td>
<td>20%(^{(i)})</td>
</tr>
<tr>
<td>Tic disorders</td>
<td>10%(^{(j)})</td>
<td>25-80%(^{(k)})</td>
</tr>
</tbody>
</table>

\(^{(a)}\) Estimated based on prevalence in children (Green et al. 1999) and adults (Weiss et al. 1985; Mannuzza et al. 1993, 1998); \(^{(b)}\) Szatmari et al. 1989; \(^{(c)}\) Anderson et al. 1987; Bowen et al. 1990; McGee et al. 1990; McGee et al. 1992; Green et al. 1999; \(^{(d)}\) Based on data in children (eg. AAP, 1998) and evidence for similar prevalence in adults (Biederman et al, 1993); \(^{(e)}\) Biederman et al. 1995; \(^{(f)}\) Mendelson et al. 1971; Blou in et al. 1978; Gittelman et al. 1985; Hechtman & Weiss 1986; Barkley et al. 1990; Mannuzza et al. 1993; \(^{(g)}\) Demilio 1989; Milin et al. 1991; Hovens et al. 1994; \(^{(h)}\) Semrud-Clikeman et al. 1992; \(^{(i)}\) Shaywitz et al. 1992; \(^{(j)}\) MTA 1999a, 1999b; Wilens, 2000; \(^{(k)}\) Comings and Comings, 1984; Shapiro, Shapiro & Young et al. 1988.
Throughout my life, it has been very difficult for me to sit down and read a book or concentrate during normal conversation. I was even thrown out of school for acting on my impulse and as a result did not continue my education.

My advice to anybody who thinks that they have ADHD is to have their doctor find a specialist and go for help. Medication is not the end all and be all, but it can help. So can coaching and or a therapy.

Howie Mandel

Forward to FAST MINDS – How to Thrive if You Have ADHD (Or Think You Might)
ADHD: Course of the Disorder

Hyperactivity

Impulsivity

Inattention

Time

Spencer, Harvard Update
Clinical Misperceptions About Adult ADHD

- ADHD in adults is a rare condition
  - Fact: ADHD prevalence is more than Bipolar Disorder and Schizophrenia taken together
  - Prevalence of 4.4%\(^1\)

- Adult ADHD is over-diagnosed
  - Fact: Only 1 in 10 adults are ever diagnosed\(^2\)

- Adult ADHD is not a financially disabling condition
  - Fact: Academic failure, job loss, impulsive spending, financial mismanagement contribute to individual economic burden and lower socioeconomic status

- Adult ADHD does not contribute to global economic burden
  - Fact: Lost work performance contributes to 120 million lost work days and $19 billion lost\(^3\)

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1 Kessler et al., American Journal of Psychiatry, 2006
2 Adler, Primary Psychiatry, 2009
3 Kessler et al., Journal of Occupational and Environmental Medicine, 2005
Clinical Misperceptions About Adult ADHD

• If you weren’t diagnosed as a child, it is unlikely you have Adult ADHD
  – Fact: 75% of patients are not diagnosed until adulthood\(^1\)

• Childhood onset for Adult ADHD is difficult to establish
  – Fact: Collateral history with family members, partners, in addition to school records and patient’s memory validates childhood onset\(^2\)

• Adult ADHD is not an important condition to treat
  – Fact: Treating ADHD in the prison population reduces criminality between 30 and 40%\(^3\)

• Adults with ADHD and very high IQs don’t need treatment
  – Fact: High IQ adults with untreated ADHD are just as impaired as adults with average IQ who are untreated for ADHD\(^4\)

\(^1\) Kessler et al., American Journal of Psychiatry, 2006
\(^2\) CADDRA Guidelines
\(^3\) Lichenstein et al., New England Journal of Medicine, 2012
\(^4\) Antshel et al., Psychological Medicine, 2009
Clinical Misperceptions About Adult ADHD

- Childhood treatment for ADHD with psychostimulants increases risk for later substance use disorder
  - Fact: Large meta-analysis indicates stimulant treatment does not increase risk for development of substance use disorder\(^1\)

- Adults with ADHD can’t benefit from medication
  - Fact: ADHD is very drug responsive, no matter how long you have lived with it

- In comorbid presentations, treating the mood disorder, anxiety disorder, addictions etc. is more important than treating core ADHD symptoms
  - Fact: Treating lifelong ADHD symptoms restores functionality and self-esteem

- In Adult ADHD, men are mostly affected
  - Fact: ADHD is an equal opportunity condition, affecting many women

\(^1\) Humphreys et al., JAMA Psychiatry, May 2013
Clinical Misperceptions About Adult ADHD

• Sheer will can overcome Adult ADHD symptoms
  – Fact: Compensatory burden occurs with massive effort and energy that adults must employ to function at all

• Adults have lived with ADHD all their life, why treat now?
  – Fact: The cognitive demands of an adult life are much more complex than that of a child or a teen

• ADHD goes away in adolescence
  – Fact: ADHD is a highly persistent neurobiological condition; where is it supposed to go?

• Why do adults question possible ADHD for themselves?
  – Fact: The diagnosis is an explanation for unfulfilled potential and lowered self-esteem. They can stop blaming themselves and blame the ADHD instead
FAST MINDS

F – Forgetful
A – Achieving below potential
S – Stuck in a rut
T – Time challenged

M – Motivationally challenged
I – Impulsive
N – Novelty seeking
D – Distractible
S – Scattered

Surman and Bilkey, FAST MINDS, 2013
Impulsivity in Adult ADHD

- Impulsive physical activities – risk taking (*Winstanley et al.*, 2006)
- Impulsive decision making (*van Gaalen et al.*, 2006)
- Verbal impulsivity (*DSM-5*)
- Impulsive driving (*Fischer et al.*, 2007)
- Impulsive spending (*Barkley*, 2008)
- Impulsive binge eating (*Obesity, Levy et al.*, 2009; *Bulimia Nervosa, Mikami et al.*, 2009)
- Bingeing on alcohol (*Ohlmeier et al.*, 2008)
- Bingeing on drugs (*Arias et al.*, 2008)
- Sexual impulsivity (*Flory et al.*, 2006)
- Impulsive gambling (*Breyer et al.*, 2009)
- Impulsive stealing (*Barkley et al.*, 2008)
- Impulsive fighting (*Barkley et al.*, 2008)
Educational Functioning by Group for UMASS Study: College Transcript

Percent of D Grades | Failed Grade | Withdrawals | Grade-point Average
--- | --- | --- | ---
ADHD | Clinical | Community
8.6 | 5 | 4.6 | 3.8
6.7 | 3.8 | 2.5 | 2.5
7.5 | 2.5 | 5.1 | 2.7
6.7 | 2.5 | 3.0 | 3.0

Russell A. Barkley, Kevin R. Murphy, Mariellen Fischer, *ADHD in Adults: What the Science Says*, 2008 (page 256)
Female Sexual Victimization and ADHD

- N=374 female college students
- ADHD symptoms increase likelihood of engaging in risky sexual behaviour
- ADHD symptoms “uniquely increase the risk of sexual victimization”

Effects of Adult ADHD on Performance of Workers: Results from WHO World Mental Health Survey Initiative

- ADHD assessed 7075 workers in 10 countries: Mexico, Belgium, Columbia, France, Germany, Italy, Lebanon, Netherlands, Spain, USA
- 3.5% of workers met criteria for ADHD
- Workers with ADHD have 22 days excess lost role performance
- Estimated 143.8 million lost days of productivity associated with ADHD in these countries
- In Mexico alone, 2.9 million annual lost days of productivity
- Minority of workers were treated for ADHD
- None of the workers in Mexico were receiving treatment

deGraaf, Kessler, et al., Occupational Environmental Medicine, May 2008
Occupational Issues of Adults With ADHD

• Consensus committee from United Kingdom, mainland Europe and United Arab Emirates met to produce statement effect of ADHD on employment

• Those with ADHD are impaired in all aspects related to employment: job searching, interview process, employment itself

• Those with ADHD may begin employment as highly motivated workers, but ADHD symptoms can soon hamper performance

• Employees have difficulties with time management, organizing schedules, keeping on top of work load, following instructions, procrastination

• Most employers do not recognize implications of ADHD

Adamou et al., BMC Psychiatry, 2013
Impact Of Untreated ADHD In The Workplace: What Adults Say

• 60% felt ADHD impacted on job performance
• 70% felt it took them too long to get things done
• 75% by the time they reached home were often too tired to manage family and parenting responsibilities
• 40% worried they might lose their job due to ADHD
Comorbid ADHD/SUD Linked to Worse Outcomes Than SUD Alone

- More severe course of SUD
- Earlier onset of substance abuse
- Lower remission rates
- More substance dependence
- Elevated risk of transition from drug abuse to drug dependence

- “The prevalence, burden, and severity of comorbid ADHD-SUD are significant and highlight the importance of effectively managing the condition”

Driving With ADHD

• 8 times more likely to lose license\(^1\)
• 4 times more likely to be involved in a collision\(^1\)
• 3 times more likely to sustain a serious injury\(^1\)
• No significant differences for gender in driving variables (braking, speed control, steering) between male and female adolescents with ADHD (age 16-19)\(^2\)
• Untreated ADHD drivers have same deficits operating a motor vehicle as non-ADHD intoxicated drivers\(^3\)

\(^1\) Cox 2007
\(^2\) Mikami et al., 2009
\(^3\) Weafer et al., 2008
Comorbidity of Other DSM-5 Conditions with ADHD

National Comorbidity Survey Replication (N=3199)

Among respondents with ADHD, reported comorbid disorder within the previous 12 months.

- Mood Disorders: 38.3%
- Anxiety Disorders: 47.1%
- Substance Abuse Disorders: 15.2%
- Impulse Control Disorders: 19.6%

Among respondents with ADHD, reported comorbid disorder within the previous 12 months.

Steps to the Clinical Diagnosis of Adult ADHD

Is there history of medical complications in pregnancy (maternal smoking, alcohol consumption, low birth weight, etc.)?

Was the patient adopted? Is there a family history for ADHD (80% genetic)?

Is there evidence for childhood onset of impairing symptoms of hyperactivity, impulsivity and distractibility (early school records document comments such as “poor attention span, does not apply himself, could do better…”)?

Is there longitudinal persistence of symptoms into adolescence and adulthood (underachievement in high school, family dysfunction, etc.)?

Murphy KR, Gordon M, Assessment of Adults With ADHD, from the text Attention-Deficit Hyperactivity Disorder, A Handbook for Diagnosis and Treatment, 2006 by Russell A. Barkley
Steps to the Clinical Diagnosis of Adult ADHD

1. Confirm or disconfirm other psychiatric disorders (rating scales and mental status examination).

2. Rule out underlying medical disorder (e.g., seizure disorder, traumatic brain injury, sleep disorder).

3. As a consequence of the ADHD symptoms, do they demonstrate impairments in multiple domains (occupational, educational, social, family, driving a motor vehicle, etc.)

4. Does the patient cross-sectionally endorse symptoms of Adult ADHD (adult rating scales, e.g., ASRS)?

Murphy KR, Gordon M, Assessment of Adults With ADHD, from the text Attention-Deficit Hyperactivity Disorder, A Handbook for Diagnosis and Treatment, 2006 by Russell A. Barkley
# ASRS Screener v1.1

## 1. Inattention

<table>
<thead>
<tr>
<th>Question</th>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
<th>Very Often</th>
</tr>
</thead>
<tbody>
<tr>
<td>How often do you have trouble wrapping up the final details of a project, once the challenging parts have been done?</td>
<td>0</td>
<td>1</td>
<td>2*</td>
<td>3*</td>
<td>4*</td>
</tr>
<tr>
<td>How often do you have difficulty getting things in order when you have to do a task that requires organization?</td>
<td>0</td>
<td>1</td>
<td>2*</td>
<td>3*</td>
<td>4*</td>
</tr>
<tr>
<td>When you have a task that requires a lot of thought, how often do you avoid or delay getting started?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3*</td>
<td>4*</td>
</tr>
<tr>
<td>How often do you have problems remembering appointments or obligations?</td>
<td>0</td>
<td>1</td>
<td>2*</td>
<td>3*</td>
<td>4*</td>
</tr>
</tbody>
</table>

## 1. Hyperactivity/Impulsivity

<table>
<thead>
<tr>
<th>Question</th>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
<th>Very Often</th>
</tr>
</thead>
<tbody>
<tr>
<td>How often do you fidget or squirm with your hands or feet when you have to sit down for a long time?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3*</td>
<td>4*</td>
</tr>
<tr>
<td>How often do you feel overly active and compelled to do things, like you were driven by a motor?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3*</td>
<td>4*</td>
</tr>
</tbody>
</table>

Significant items in Orange (*p=0.5); Likely to have ADHD with ≥4 significant items

[http://www.med.nyu.edu/psych/assets/adhdscreen18.pdf](http://www.med.nyu.edu/psych/assets/adhdscreen18.pdf)
ADHD in Adults: Differential Diagnosis

Consider:

– Cognitive deficits secondary to anxiety disorders, mood disorders and psychosis

– Substance Use Disorder

– Cognitive disorders (intellectual functioning and learning disabilities)

– Sensory impairment

– Psychosocial development/stressors

– Neurological disorder/iatrogenic
Why Treat?

- ADHD by definition is an impairing condition which can potentially lower life expectancy
- Cigarette smoking/obesity (New England Journal of Medicine, 2009)
- Motor vehicle accidents
- Reduces criminality
- Increased risk for STDs (HIV)
- Increased adherence rates for treatment of psychiatric comorbidities (e.g. Bipolar Disorder, addictions)
- Increased adherence rates for treatment of other medical conditions (e.g. diabetes, HIV, chronic viral hepatitis) – General Hospital Psychiatry, 2008
- Increased adherence rates for other prescribed medications (e.g. birth control, asthma medication, etc.)

Castaneda R et al., “Treating adult attention deficit hyperactivity disorder in hospitalized psychiatric patients”, General Hospital Psychiatry, 2008
Russell A. Barkley, Kevin R. Murphy, Mariellen Fischer, ADHD in Adults: What the Science Says, 2008
(APA, DSM-5, 2013)
Lechenstein et al., New England Journal of Medicine, 2013
Bilkey, 2012
ADHD Medications Available in the U.K.

• Atomoxetine (Strattera) - only medication with adult indication in Europe
• Lisdexamfetamine dimesylate (Elvanse)
• Methylphenidate IR (Ritalin, Medikinet)
• Methylphenidate modified release (Equesym XL, Medikinet XL)
• OROS Methylphenidate (Concerta)
Extended Release Formulations Preferred for Children, Adolescents and Adults With ADHD

- Stigma of taking medication during the day avoided\(^1\)
- Improved adherence\(^2\)
- Longer duration of effects\(^2\)
- Some research shows higher rates of remission\(^3\)
- Methylphenidate is approximately 50\% potency of amphetamine

1 Hosenbocus, Chahal, Can Acad of Child, Adolescent Psych, 2009
2 CADDRA, 2011
3 Steele et al., Can J Clin Pharmacology, 2006
Treatment Side Effects

Stimulants

- Dry mouth, appetite reduction, GI upset, insomnia, blood pressure elevation, dysphoria/irritability (may emerge after a few weeks), obsessiveness, tics, headaches

Non Stimulants (Atomoxetine)

- Similar to stimulants except a higher incidence of GI upset, sedation and sexual dysfunction
- Divided/QHS dosing may help
ADHD Medications Not Linked to Increased Cardiovascular Risks in Adults

- Study of 443,198 young and middle-aged adults
- N=150,359 ADHD medication users
- Study concluded that ADHD medication use, “was not associated with an increased risk of serious cardiovascular events.”

Habel et al., JAMA, December 2011
CBT for Adolescent ADHD

- N=68 adolescents, mean age 16.4 years, treated with medication
- Completed a version of Steve Safren’s CBT program; 13-16 sessions
- Improvements noted in inattentive symptoms, pharmacotherapy adherence, school attendance, school tardiness, relationships and self-esteem
- Lower doses of medication needed to maintain functional improvement

Efficacy of CBT for ADHD in Medication-treated Adults

Independent Evaluator Measures of ADHD Symptom Severity

<table>
<thead>
<tr>
<th></th>
<th>ADIHR Symptom Severity</th>
<th>Baseline</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBT plus continued</td>
<td>29.37</td>
<td>15.19</td>
<td></td>
</tr>
<tr>
<td>psychopharmacology</td>
<td>(n=16)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Continued</td>
<td>26.0</td>
<td>20.8</td>
<td></td>
</tr>
<tr>
<td>psychopharmacology</td>
<td>alone (n=15)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

p<0.01

<table>
<thead>
<tr>
<th>✓</th>
<th>Areas for Extra Help</th>
<th>Resources to Assist You</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Your understanding of how FAST MINDS or ADHD impacts your life</td>
<td>Psychiatrist; psychotherapist; coach who specializes in ADHD; group for ADHD or organization</td>
</tr>
<tr>
<td></td>
<td>Building mindfulness skills to be less governed by internal distractions</td>
<td>Mind-body work – Lidia Zylowska, <em>The Mindfulness Prescription for Adult ADHD</em></td>
</tr>
<tr>
<td></td>
<td>Practice decreasing negative self-talk, attitudes that get in the way of clear, engaged function</td>
<td>Mental health clinicians; CBT; dialectical behavioral therapy; self-help mental health workbooks</td>
</tr>
<tr>
<td></td>
<td>Breaking tasks down into steps you can vividly hold in your mind</td>
<td>Organizational, job, or ADHD-specific coach; mentor; well-organized friend/family member; CBT</td>
</tr>
<tr>
<td></td>
<td>Creating a low-distraction (actual and virtual) workspace at home, work, and school</td>
<td>Organizational or ADHD-specific coach; well-organized friend; employee assistance/human resources department; university/college student services department</td>
</tr>
<tr>
<td></td>
<td>Making use of to-do lists and planners a routine</td>
<td>Self-help organizational books; organizational coach; well-organized friend/family member; rehabilitation specialist; phone apps</td>
</tr>
</tbody>
</table>
## What Else Works

<table>
<thead>
<tr>
<th>Areas for Extra Help</th>
<th>Resources to Assist You</th>
</tr>
</thead>
<tbody>
<tr>
<td>Getting ideas for high-yield behavior patterns, systems and habits</td>
<td>ADHD coach; support group; mentor; close friend/family member; students services department; rehabilitation specialist</td>
</tr>
<tr>
<td>Training in using peripheral devices such as phones, computers, tablets</td>
<td>Classes by device companies; online tutorials; workplace, community college classes</td>
</tr>
<tr>
<td>Eliminating things in your life that you don’t do well or engage in naturally</td>
<td>Career counsellor; ADHD coach; close friend/family member; aptitude and vocational counselling; financial advisor</td>
</tr>
<tr>
<td>Chances to see other people apply useful habits</td>
<td>Mentor, close friend/family member; support groups</td>
</tr>
<tr>
<td>Practice habits and systems with people</td>
<td>Close friend/family member; work colleagues; rehabilitation specialist; tutor</td>
</tr>
<tr>
<td>Determining critical moments when you can make better choices</td>
<td>Close friend/family member; ADHD coach; support group; psychotherapist</td>
</tr>
</tbody>
</table>

Surman and Bilkey, *FAST MINDS*, 2013
<table>
<thead>
<tr>
<th>Areas for Extra Help</th>
<th>Resources to Assist You</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adapting and choosing work, home, and social environments that match you best</td>
<td>Career counsellor; ADHD coach; support group; aptitude and vocational assessment; close friend/family member</td>
</tr>
<tr>
<td>Keeping health daily rhythms</td>
<td>Personal trainer; support group; close friend/family member; mindfulness</td>
</tr>
<tr>
<td>Practicing social skills</td>
<td>Coach; Toastmasters group; close friend/family member; mindfulness</td>
</tr>
<tr>
<td>Creating accommodations at work or school</td>
<td>Human resources department; school disability office; ADHD coach; close friend/family member</td>
</tr>
<tr>
<td>Measuring progress by tracking challenges and being held accountable</td>
<td>Close friend/family member; ADHD coach; online tools</td>
</tr>
<tr>
<td>Choosing educational, career, social, or other opportunities that can make up a more fulfilling life</td>
<td>Career counsellor; aptitude and vocational assessment; mentor; shadow close friends and family</td>
</tr>
<tr>
<td>Managing finances</td>
<td>Accountant/bookkeeper; credit/debt counselling</td>
</tr>
</tbody>
</table>
ADHD: A Tale of Two Cities

Untreated → Treated

Academic underachievement → Academic success
Occupational underachievement → Improved job proficiency
Poor driving outcomes → Reduced driving risks
Poor social skills → More dialled in socially
Impulsive risk-taking → Reduced impulsivity (spending, sexual, etc.)
Distractible → Improved concentration
Low self-esteem → Self-actualization
Demoralized, overwhelmed → Improved quality of life

Bilkey 2009
Online Resources

• **mhra.gov.uk** (Medicines and Healthcare products Regulatory Agency) – Learn about medications used to treat ADHD in the UK

• **CHADD** (Children and Adults with Attention-Deficit Hyperactivity Disorder) – Excellent source of information about ADHD across the lifespan

• **CADDRA** (Canadian ADHD Resource Alliance) – Information for doctors, parents, patients and educators

• **flylady.net** – Organizational strategies for those with ADHD
“[An] easy-to-read yet sophisticated guide to what will help you most if you have ADHD... A superb book.”
Edward Hallowell
Co-author of Driven to Distraction

“A fascinating and refreshing perspective on ADHD... an excellent set of recommendations for how people with adult ADHD can manage their difficulties and lead more successful, fulfilling lives.”
Russell A. Barkley, Ph.D., author of Taking Charge of Adult ADHD

“One of the most innovative, comprehensive, and useful guides to the world of the ADHD adult.”
Mark Stein, Ph.D., ABPP professor of psychiatry and director of Life-Span ADHD program, University of Illinois at Chicago

“This is an excellent resource which will be of great help to adults struggling with ADHD. It is one of the most comprehensive books on the subject that I have seen.”
Dr. Mary Solanto, Associate Professor - Director, ADHD Centre, Department of Psychiatry, Mount Sinai Medical Centre, New York